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| 0.21 | 0.21 |

1000 1000 1000

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=> s homoserine transsuccinylase
L1 61 HOMOSERINE TRANSSUCCINYLASE

=> dup rem l1
PROCESSING COMPLETED FOR L1
L2 27 DUP REM L1 (34 DUPLICATES REMOVED)
ANSWERS '1-5' FROM FILE MEDLINE
ANSWERS '6-7' FROM FILE BIOSIS
ANSWERS '8-27' FROM FILE CAPLUS

=> d his

(FILE 'HOME' ENTERED AT 10:04:27 ON 05 AUG 2006)

FILE 'MEDLINE, AGRICOLA, DRUGU, JICST-EPLUS, CABA, BIOTECHNO, BIOSIS,
CAPLUS, LIFESCI, BIOTECHDS, EMBASE, BIOENG, SCISEARCH' ENTERED AT
10:04:54 ON 05 AUG 2006
L1 61 S HOMOSERINE TRANSSUCCINYLASE
L2 27 DUP REM L1 (34 DUPLICATES REMOVED)

=> d 12 ibib abs total

L2 ANSWER 1 OF 27 MEDLINE on STN DUPLICATE 3
ACCESSION NUMBER: 2005203044 MEDLINE

DOCUMENT NUMBER: PubMed ID: 15838036
TITLE: Polyphosphate kinase protects *Salmonella enterica* from weak organic acid stress.
AUTHOR: Price-Carter Marian; Fazzio Thomas G; Vallbona Ester Ibanez; Roth John R
CORPORATE SOURCE: Department of Biology, University of Utah, Salt Lake City, Utah 84112, USA.
CONTRACT NUMBER: GM34804 (NIGMS)
SOURCE: Journal of bacteriology, (2005 May) Vol. 187, No. 9, pp. 3088-99.
Journal code: 2985120R. ISSN: 0021-9193.
PUB. COUNTRY: United States
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 200506
ENTRY DATE: Entered STN: 20 Apr 2005
Last Updated on STN: 22 Jun 2005
Entered Medline: 21 Jun 2005

AB Mutants of *Salmonella enterica* lacking polyphosphate kinase (ppk) grow poorly in the presence of the weak organic acids acetate, propionate, and benzoate. This sensitivity is corrected by methionine and seems to result from destabilization of MetA (homoserine transsuccinylase), the first enzyme in methionine biosynthesis. The MetA protein is known to be sensitive to thermal inactivation, and ppk mutants are more sensitive to heat-induced methionine auxotrophy. Peroxide increases the sensitivity of ppk mutants to both heat and acid and may oxidatively damage (carbonylate) destabilized MetA. While acid appears to impair methionine biosynthesis, it leads to derepression of MetA and may inhibit growth by causing toxic accumulation of denatured protein. This is supported by the observation that the overexpression of MetA in ppk mutants causes acid sensitivity that is not corrected by methionine. We propose that polyphosphate acts as a chemical chaperone that helps refold MetA and/or may stimulate proteolysis of toxic denatured protein. The instability of MetA protein may provide a metabolic fuse that blocks growth under conditions that denature proteins; the sensitivity of this fuse is modulated by polyphosphate.

L2 ANSWER 2 OF 27 MEDLINE on STN DUPLICATE 7
ACCESSION NUMBER: 2000391212 MEDLINE
DOCUMENT NUMBER: PubMed ID: 10913262
TITLE: Enzyme-catalyzed acylation of homoserine: mechanistic characterization of the *Haemophilus influenzae* met2-encoded homoserine transacetylase.
AUTHOR: Born T L; Franklin M; Blanchard J S
CORPORATE SOURCE: Department of Biochemistry, Albert Einstein College of Medicine, Bronx, NY 10461, USA.
CONTRACT NUMBER: AI33696 (NIAID)
GM19514 (NIGMS)
SOURCE: Biochemistry, (2000 Jul 25) Vol. 39, No. 29, pp. 8556-64.
Journal code: 0370623. ISSN: 0006-2960.
PUB. COUNTRY: United States
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 200008
ENTRY DATE: Entered STN: 24 Aug 2000
Last Updated on STN: 24 Aug 2000
Entered Medline: 15 Aug 2000

AB The first unique step in bacterial and plant methionine biosynthesis involves the acylation of the gamma-hydroxyl of homoserine. In *Haemophilus influenzae*, acylation is accomplished via an acetyl-CoA-dependent acetylation catalyzed by homoserine transacetylase.

The activity of this enzyme regulates flux of homoserine into multiple biosynthetic pathways and, therefore, represents a critical control point for cell growth and viability. We have cloned homoserine transacetylase from *H. influenzae* and present the first detailed enzymatic study of this enzyme. Steady-state kinetic experiments demonstrate that the enzyme utilizes a ping-pong kinetic mechanism in which the acetyl group of acetyl-CoA is initially transferred to an enzyme nucleophile before subsequent transfer to homoserine to form the final product, O-acetylhomoserine. The maximal velocity and V/K(homoserine) were independent of pH over the range of values tested, while V/K(acetyl)(-) (CoA) was dependent upon the ionization state of a single group exhibiting a pK value of 8.6, which was required to be protonated. Solvent kinetic isotope effect studies yielded inverse effects of 0.75 on V and 0.74 on V/K(CoA) on the reverse reaction and effects of 1.2 on V and 1.7 on V/K(homoserine) on the forward reaction. Direct evidence for the formation of an acetyl-enzyme intermediate was obtained using rapid-quench labeling studies. On the basis of these observations, we propose a chemical mechanism for this important member of the acyltransferase family and contrast its mechanism with that of homoserine transsuccinylase.

L2 ANSWER 3 OF 27 MEDLINE on STN DUPLICATE 8
ACCESSION NUMBER: 2000042598 MEDLINE
DOCUMENT NUMBER: PubMed ID: 10572016
TITLE: Enzyme-catalyzed acylation of homoserine: mechanistic characterization of the *Escherichia coli* metA-encoded homoserine transsuccinylase.
AUTHOR: Born T L; Blanchard J S
CORPORATE SOURCE: Department of Biochemistry, Albert Einstein College of Medicine, Bronx, New York 10461, USA.
CONTRACT NUMBER: AI33696 (NIAID)
GM19514 (NIGMS)
SOURCE: Biochemistry, (1999 Oct 26) Vol. 38, No. 43, pp. 14416-23.
Journal code: 0370623. ISSN: 0006-2960.
PUB. COUNTRY: United States
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 199912
ENTRY DATE: Entered STN: 13 Jan 2000
Last Updated on STN: 13 Jan 2000
Entered Medline: 17 Dec 1999

AB The first unique step in bacterial and plant methionine biosynthesis involves the activation of the gamma-hydroxyl of homoserine. In *Escherichia coli*, this activation is accomplished via a succinylation reaction catalyzed by homoserine transsuccinylase. The activity of this enzyme is closely regulated in vivo and therefore represents a critical control point for cell growth and viability. We have cloned homoserine transsuccinylase from *E. coli* and present the first detailed enzymatic study of this enzyme. Steady-state kinetic experiments demonstrate that the enzyme utilizes a ping-pong kinetic mechanism in which the succinyl group of succinyl-CoA is initially transferred to an enzyme nucleophile before subsequent transfer to homoserine to form the final product, O-succinylhomoserine. The maximal velocity, V/K(succinyl)(-) (CoA), and V/K(homoserine) all exhibited a bell-shaped pH dependence with apparent pK's of 6.6 and approximately 7.9. The enzyme was inhibited by iodoacetamide in a pH-dependent manner, with an apparent pK of the group being inactivated of 6.4. This suggests the presence of an active site cysteine which forms a succinyl-cysteine intermediate during enzymatic turnover. Solvent kinetic isotope effect studies yielded inverse effects of 0.7 on V and 0.61 on V/K in the reverse reaction only. On the basis of these observations, we propose a detailed chemical mechanism for this important member of the acyltransferase

family.

L2 ANSWER 4 OF 27 MEDLINE on STN DUPLICATE 9
ACCESSION NUMBER: 95173116 MEDLINE
DOCUMENT NUMBER: PubMed ID: 7868613
TITLE: Heat shock-dependent transcriptional activation of the metA gene of Escherichia coli.
AUTHOR: Biran D; Brot N; Weissbach H; Ron E Z
CORPORATE SOURCE: Department of Molecular Microbiology and Biotechnology, Tel-Aviv University, Israel.
SOURCE: Journal of bacteriology, (1995 Mar) Vol. 177, No. 5, pp. 1374-9.
Journal code: 2985120R. ISSN: 0021-9193.
PUB. COUNTRY: United States
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 199503
ENTRY DATE: Entered STN: 7 Apr 1995
Last Updated on STN: 6 Feb 1998
Entered Medline: 27 Mar 1995

AB In *Escherichia coli*, the growth rate at elevated temperatures is controlled by the availability of endogenous methionine, which is limited because of the temperature sensitivity of the metA gene product, homoserine transsuccinylase (HTS). In order to determine the relationship between this control mechanism and the heat shock response, we estimated the cellular levels of HTS during heat shock by Western (immunoblot) analysis and found an increase following induction by temperature shift and by addition of ethanol or cadmium ions. The elevated level of HTS was a result of transcriptional activation of the metA gene. This activation was heat shock dependent, as it did not take place in rpoH mutants, and probably specific to the metA gene, as another gene of the methionine regulon (metE) was not activated. These results suggest a metabolic link between the two systems that control the response of *E. coli* to elevated temperatures: the metA gene, which codes for the enzyme responsible for regulating cell growth as a function of temperature elevation (HTS), is transcriptionally activated by the heat shock response.

L2 ANSWER 5 OF 27 MEDLINE on STN DUPLICATE 12
ACCESSION NUMBER: 76024802 MEDLINE
DOCUMENT NUMBER: PubMed ID: 1100601
TITLE: Growth rate of Enterobacteriaceae at elevated temperatures: limitation by methionine.
AUTHOR: Ron E Z
SOURCE: Journal of bacteriology, (1975 Oct) Vol. 124, No. 1, pp. 243-6.
Journal code: 2985120R. ISSN: 0021-9193.
PUB. COUNTRY: United States
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 197512
ENTRY DATE: Entered STN: 13 Mar 1990
Last Updated on STN: 13 Mar 1990
Entered Medline: 29 Dec 1975

AB The effect of elevated temperatures on growth rate was studied in five strains of Enterobacteriaceae. In all the strains tested a shift to the elevated temperature resulted in an immediate decrease in growth rate which was due to limitation in the availability of endogenous methionine. The first biosynthetic enzyme of the methionine pathway-homoserine transsuccinylase-was studied in extracts of *Aerobacter aerogenes*, *Salmonella typhimurium*, and *Escherichia coli* and was shown to be

temperature sensitive in all of them.

L2 ANSWER 6 OF 27 BIOSIS COPYRIGHT (c) 2006 The Thomson Corporation on STN
ACCESSION NUMBER: 1983:73430 BIOSIS
DOCUMENT NUMBER: PREV198324073430; BR24:73430
TITLE: USE OF A RECOMBINANT PLASMID CONTAINING THE MET-A GENE OF
ESCHERICHIA-COLI TO STUDY GROWTH OF ENTEROBACTERIACEAE AT
ELEVATED TEMPERATURES.
AUTHOR(S): MICHAELI S [Reprint author]; RON E Z
CORPORATE SOURCE: TEL-AVIV UNIV
SOURCE: (1982) pp. P95. INTERNATIONAL UNION OF MICROBIOLOGICAL
SOCIETIES. 13TH INTERNATIONAL CONGRESS OF MICROBIOLOGY;
BOSTON, MASS., USA, AUG. 8-13, 1982. XIV+182P. AMERICAN
SOCIETY FOR MICROBIOLOGY: WASHINGTON, D.C., USA. PAPER.
ISBN: 0-914826-44-1.
DOCUMENT TYPE: Book
Conference; (Meeting)
FILE SEGMENT: BR
LANGUAGE: ENGLISH

L2 ANSWER 7 OF 27 BIOSIS COPYRIGHT (c) 2006 The Thomson Corporation on STN
ACCESSION NUMBER: 1982:171714 BIOSIS
DOCUMENT NUMBER: PREV198273031698; BA73:31698
TITLE: CONSTRUCTION AND PHYSICAL MAPPING OF PLASMIDS CONTAINING
THE META GENE OF ESCHERICHIA-COLI K-12.
AUTHOR(S): MICHAELI S [Reprint author]; RON E Z; COHEN G
CORPORATE SOURCE: DEP MICROBIOL, GEORGE S WISE FACULTY LIFE SCI, TEL-AVIV
UNIV, TEL-AVIV, ISRAEL
SOURCE: Molecular and General Genetics, (1981) Vol. 182, No. 2, pp.
349-354.
CODEN: MGGEAE. ISSN: 0026-8925.
DOCUMENT TYPE: Article
FILE SEGMENT: BA
LANGUAGE: ENGLISH

AB Plasmids containing the metA gene (which codes for homoserine
transsuccinylase of the methionine biosynthetic pathway) of E.
coli K-12 were constructed in vitro using plasmid pBR322 as the cloning
vehicle and λ metA transducing phage as the source of metA DNA.
EcoRI digests of pBR322 and λ metA20 were jointed by ligase and
plasmids carrying the metA gene were selected after transformation in a
metA deletion strain. Recombinant DNA molecules contained 1 pBR322
fragment and 1 λ metA20 fragment of 12.2 kb [kilobases] which was
present in either of 2 possible orientations. Plasmids constructed by
BamH1 digestion of λ metA2 contained a single bacterial DNA fragment
of 5.8 kb inserted in the tet gene. Insertion of the metA fragment led to
loss of resistance to tetracycline in one orientation and partial
resistance in the opposite orientation.

L2 ANSWER 8 OF 27 CAPLUS COPYRIGHT 2006 ACS on STN DUPLICATE 1
ACCESSION NUMBER: 2005:1239041 CAPLUS
DOCUMENT NUMBER: 144:2275
TITLE: Construction of microorganism containing recombinant
homoserine transsuccinylase with
altered feedback sensitivity and recombinant
S-adenosylmethionine synthetase with reduced activity
for the production of methionine
INVENTOR(S): Bestel-Corre, Gwenaelle Anne Lise; Chateau, Michel;
Figge, Rainer Martin; Raynaud, Celine; Soucaille,
Philippe Noeel Paul
PATENT ASSIGNEE(S): Metabolic Explorer, Fr.
SOURCE: PCT Int. Appl., 72 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent

LANGUAGE: English

FAMILY ACC. NUM. COUNT: 2

PATENT INFORMATION:

| PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|---|--|----------|-----------------|----------|
| WO 2005111202 | A1 | 20051124 | WO 2004-IB1901 | 20040512 |
| W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW | RW: BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG | | | |
| WO 2005108561 | A2 | 20051117 | WO 2005-EP52180 | 20050512 |
| W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KM, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NG, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SM, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW | RW: BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG | | | |

PRIORITY APPLN. INFO.:

WO 2004-IB1901 A 20040512

OTHER SOURCE(S): CASREACT 144:2275; MARPAT 144:2275

AB The present invention relates to the use of recombinant homoserine transsuccinylase with altered sensitivity to feedback inhibitors S-adenosylmethionine and methionine (MetA*) and optionally, recombinant S-adenosylmethionine synthetase with reduced activity (MetK*) for the production of methionine, its precursors or derivs. thereof. More specifically, the authors isolated Escherichia coli mutants containing homoserine transsuccinylase which show decreased feedback-sensitivity towards S-adenosylmethionine and methionine. E. coli mutants containing S-adenosylmethionine synthetase with reduced activity were also isolated. Construction of E. coli strains for the production of O-succinylhomoserine or methionine by combining feed-back resistant MetA alleles with MetK alleles with decreased activity is described. Fermentation

of

E. coli production strains and anal. of yield is reported.

REFERENCE COUNT: 6 THERE ARE 6 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L2 ANSWER 9 OF 27 CAPLUS COPYRIGHT 2006 ACS on STN DUPLICATE 2

ACCESSION NUMBER: 2005:1220814 CAPLUS

DOCUMENT NUMBER: 143:474228

TITLE: Construction of microbial recombinant homoserine transsuccinylase with altered feedback sensitivity and S-adenosyl methionine synthetase with reduced activity for the production of methionine

INVENTOR(S): Bestel-Corre, Gwenaelle; Chateau, Michel; Figge, Rainer Martin; Raynaud, Celine; Soucaille, Philippe Noel Paul

PATENT ASSIGNEE(S): Metabolic Explorer, Fr.

SOURCE: PCT Int. Appl., 46 pp.

CODEN: PIXXD2

DOCUMENT TYPE:

Patent

LANGUAGE:

English

FAMILY ACC. NUM. COUNT:

2

PATENT INFORMATION:

| PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|---|--|----------|-----------------|----------|
| WO 2005108561 | A2 | 20051117 | WO 2005-EP52180 | 20050512 |
| W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KM, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NG, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SM, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW | RW: BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG | | | |
| WO 2005111202 | A1 | 20051124 | WO 2004-IB1901 | 20040512 |
| W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW | RW: BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG | | | |

PRIORITY APPLN. INFO.:

WO 2004-IB1901 A 20040512

OTHER SOURCE(S): CASREACT 143:474228; MARPAT 143:474228

AB The present invention relates to the use of recombinant homoserine transsuccinylase with altered feedback sensitivity (MetA*) and eventually, recombinant S-adenosyl methionine synthetase with reduced activity (MetK*) for the production of methionine, its precursors or derivs. thereof. More specifically, Escherichia coli mutants containing homoserine transsuccinylase with decreased feedback sensitivity towards methionine and S-adenosylmethionine were isolated. E. coli mutants containing S-adenosyl methionine synthetase with reduced activity were also isolated. Construction of E. coli strains for the production of O-succinylhomoserine or methionine by combined feed-back resistant MetA alleles with MetK alleles with decreased activity is described. Fermentation of

of

E. coli production strains and anal. of yield is reported.

L2 ANSWER 10 OF 27 CAPLUS COPYRIGHT 2006 ACS on STN DUPLICATE 4

ACCESSION NUMBER: 2004:371078 CAPLUS

DOCUMENT NUMBER: 140:387796

TITLE:

Methionine and SAM feedback-resistant homoserine transsuccinylases with modified C-terminus

INVENTOR(S):

Leonhartsberger, Susanne; Pfeiffer, Kerstin; Winterhalter, Christoph; Bauer, Brigitte

PATENT ASSIGNEE(S):

Consortium fuer Elektrochemische Industrie G.m.b.H., Germany

SOURCE:

PCT Int. Appl., 33 pp.

CODEN: PIXXD2

DOCUMENT TYPE:

Patent

LANGUAGE:

German

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

| PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|---|------|----------|------------------|------------|
| WO 2004038013 | A2 | 20040506 | WO 2003-EP11486 | 20031016 |
| WO 2004038013 | A3 | 20040624 | | |
| W: CA, CN, JP, RU, US | | | | |
| RW: AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR | | | | |
| DE 10249642 | A1 | 20040513 | DE 2002-10249642 | 20021024 |
| EP 1570066 | A2 | 20050907 | EP 2003-769405 | 20031016 |
| R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, FI, RO, CY, TR, BG, CZ, EE, HU, SK | | | | |
| CN 1705751 | A | 20051207 | CN 2003-80101894 | 20031016 |
| JP 2006503568 | T2 | 20060202 | JP 2004-545867 | 20031016 |
| US 2006160173 | A1 | 20060720 | US 2005-530844 | 20050408 |
| PRIORITY APPLN. INFO.: | | | DE 2002-10249642 | A 20021024 |
| | | | WO 2003-EP11486 | W 20031016 |

AB The invention relates to a homoserine transsuccinylase, which exhibits reduced sensitivity towards L-methionine or SAM in comparison with a homoserine transsuccinylase wild-type enzyme, whereby the latter comprises an amino acid sequence containing a TyrGlnXaaThrPro sub-sequence, the Thr of said sub-sequence lying between positions 285 and 310 of the amino acid sequence. The inventive homoserine transsuccinylase is characterized in that in comparison with the wild-type enzyme at least 2 amino acids are modified, said modification taking place in the Thr of the sub-sequence or in the C-terminal. Thus, exts. of E. coli containing metA gene mutants were analyzed for homoserine transsuccinylase activity in the presence of 1 mM Met or SAM. The wild-type enzyme retains 2% and 0.5% activity, resp. One of the mutants exhibited 95% activity under these circumstances. The Ki for Met was 16 mM and for SAM 9 mM.

L2 ANSWER 11 OF 27 CAPLUS COPYRIGHT 2006 ACS on STN DUPLICATE 5

ACCESSION NUMBER: 2004:349595 CAPLUS

DOCUMENT NUMBER: 140:370810

TITLE: Feedback-resistant homoserine transsuccinylase mutants, microorganisms producing them, and their use in production of methionine and SAM

INVENTOR(S): Winterhalter, Christoph; Leonhartsberger, Susanne; Pfeiffer, Kerstin; Bauer, Brigitte

PATENT ASSIGNEE(S): Consortium fuer Elektrochemische Industrie G.m.b.H., Germany

SOURCE: Ger. Offen., 22 pp.

CODEN: GWXXBX

DOCUMENT TYPE: Patent

LANGUAGE: German

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

| PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|---|------|----------|------------------|----------|
| DE 10247437 | A1 | 20040429 | DE 2002-10247437 | 20021011 |
| WO 2004035617 | A2 | 20040429 | WO 2003-EP10978 | 20031002 |
| WO 2004035617 | A3 | 20040617 | | |
| W: CA, CN, JP, RU, US | | | | |
| RW: AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR | | | | |
| EP 1549754 | A2 | 20050706 | EP 2003-767502 | 20031002 |
| R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, FI, RO, CY, TR, BG, CZ, EE, HU, SK | | | | |

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|------------------------|----|----------|------------------|------------|
| CN 1703517 | A | 20051130 | CN 2003-80101208 | 20031002 |
| JP 2006516092 | T2 | 20060622 | JP 2004-544072 | 20031002 |
| PRIORITY APPLN. INFO.: | | | DE 2002-10247437 | A 20021011 |
| | | | WO 2003-EP10978 | W 20031002 |

AB Homoserine transsuccinylase, which contains at least one mutation compared to a homoserine transsuccinylase wild type enzyme and compared to the wild type enzyme shows a reduced sensitivity to L-methionine or SAM is disclosed. The wild-type enzyme contains a partial sequence AspGlyXaaXaaXaaThrGlyAlaPro between residues 90 and 115 and a partial sequence TyrGlnXaaThrPro between residues 285 and 310. The mutations comprise an amino acid exchange of Asp in AspGlyXaaXaaXaaThrGlyAlaPro or an amino acid exchange of Tyr in TyrGlnXaaThrPro. Thus, the Y294C mutant of E. coli MetA exhibits 96% activity in the presence of 1 mM Met while the wild-type enzyme is almost totally inhibited. The Ki for Met in the mutant is 11 mM, for Met in the wild-type, 0.05 mM. The same mutant show 92% activity in the presence of 1 mM SAM and a Ki of 10 mM, while the wild-type enzyme shows negligible activity and Ki of 0.2 mM.

L2 ANSWER 12 OF 27 CAPLUS COPYRIGHT 2006 ACS on STN DUPLICATE 6

ACCESSION NUMBER: 2000:342198 CAPLUS
 DOCUMENT NUMBER: 133:3756
 TITLE: L-methionine and its preparation with transgenic Escherichia coli mutants with defective repressor and enhanced homoserine transsuccinylase activity
 INVENTOR(S): Usuta, Yoshihiro; Kurahashi, Osamu
 PATENT ASSIGNEE(S): Ajinomoto Co., Inc., Japan
 SOURCE: Jpn. Kokai Tokkyo Koho, 23 pp.
 CODEN: JKXXAF
 DOCUMENT TYPE: Patent
 LANGUAGE: Japanese
 FAMILY ACC. NUM. COUNT: 1
 PATENT INFORMATION:

| PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|------------------------|-------|----------|-----------------|----------|
| ----- | ----- | ----- | ----- | ----- |
| JP 2000139471 | A2 | 20000523 | JP 1998-326717 | 19981117 |
| PRIORITY APPLN. INFO.: | | | JP 1998-326717 | 19981117 |

AB Described is a method of manufacturing L-methionine by cultivating a Escherichia coli mutant with defective repressors (gene metJ), enhanced homoserine transsuccinylase (gene metA) activity, and, optionally, decreased S-adenosyl methionine synthetase activity. Furthermore, the mutants may also have the enhanced activities of cystathione- γ -synthase and aspartokinase-homoserine dehydrogenase II. Also claimed are the S-adenosyl methionine synthetase (metK) mutants with substitution mutations at 27-Arg \rightarrow Cys, 296-Ile \rightarrow Ser, 298-Pro \rightarrow Leu, or a combination of them. The mutants are free of the synergistic inhibition by L-methionine and S-adenosyl methionine. Production of L-methionine with improved efficiency by using the Escherichia coli mutants was demonstrated.

L2 ANSWER 13 OF 27 CAPLUS COPYRIGHT 2006 ACS on STN DUPLICATE 10

ACCESSION NUMBER: 1989:568215 CAPLUS
 DOCUMENT NUMBER: 111:168215
 TITLE: Nucleotide sequence of the metA gene encoding homoserine trans-succinylase in Escherichia coli
 AUTHOR(S): Duclos, B.; Cortay, J. C.; Bleicher, F.; Ron, E. Z.; Richaud, C.; Saint Girons, I.; Cozzone, A. J.
 CORPORATE SOURCE: Lab. Biol. Mol., Univ. Lyon, Villeurbanne, 69622, Fr.
 SOURCE: Nucleic Acids Research (1989), 17(7), 2856
 CODEN: NARHAD; ISSN: 0305-1048

DOCUMENT TYPE: Journal
 LANGUAGE: English
 AB The nucleotide sequence of the 927 bp long metA gene encoding homoserine transsuccinylase is presented. The deduced amino acid sequence indicates a protein of 35,673 daltons in good agreement with the predicted mol. mass of the polypeptide. The last 103 codons were part of an unidentified open reading frame immediately upstream of the aceB gene.

L2 ANSWER 14 OF 27 CAPLUS COPYRIGHT 2006 ACS on STN DUPLICATE 11
 ACCESSION NUMBER: 1984:524135 CAPLUS
 DOCUMENT NUMBER: 101:124135
 TITLE: Expression of the metA gene of Escherichia coli K-12 in recombinant plasmids
 AUTHOR(S): Michaeli, Shulamit; Ron, Eliora Z.
 CORPORATE SOURCE: George S. Wise Fac. Life Sci., Tel Aviv Univ., Tel Aviv-Jaffa, Israel
 SOURCE: FEMS Microbiology Letters (1984), 23(2-3), 125-9
 CODEN: FMLED7; ISSN: 0378-1097
 DOCUMENT TYPE: Journal
 LANGUAGE: English
 AB The expression of the metA gene for homoserine transsuccinylase [9030-70-0] was studied in wild-type and in deregulated strains of E. coli K-12 carrying the gene on multicopy plasmids. The mol. weight of the product synthesized by the metA gene was 40,000; the whole enzyme consisted of 2 subunits. In deregulated strains (i.e., those carrying a metJ mutation), the activity of the metA gene was increased 2-fold. Thus, even when metA is cloned onto a multicopy plasmid, it is under the neg. control of the regulatory metJ gene.

L2 ANSWER 15 OF 27 CAPLUS COPYRIGHT 2006 ACS on STN
 ACCESSION NUMBER: 2004:513390 CAPLUS
 DOCUMENT NUMBER: 141:66285
 TITLE: Virulence genes and proteins from Pseudomonas aeruginosa and Klebsiella pneumoniae, and their therapeutic, diagnostic and vaccine use
 INVENTOR(S): Cosson, Pierre; Kohler, Thilo; Benghezal, Mohammed; Marchetti, Anna; Van Delden, Christian
 PATENT ASSIGNEE(S): University of Geneva, Switz.
 SOURCE: U.S. Pat. Appl. Publ., 43 pp.
 CODEN: USXXCO
 DOCUMENT TYPE: Patent
 LANGUAGE: English
 FAMILY ACC. NUM. COUNT: 2
 PATENT INFORMATION:

| PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|--|------|----------|-----------------|----------|
| US 2004122212 | A1 | 20040624 | US 2002-324967 | 20021220 |
| US 6974680 | B2 | 20051213 | | |
| CA 2510474 | AA | 20040708 | CA 2003-2510474 | 20031219 |
| WO 2004057018 | A2 | 20040708 | WO 2003-CH836 | 20031219 |
| WO 2004057018 | A3 | 20040902 | | |
| W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH,
CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD,
GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC,
LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NI, NO,
NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ,
TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW | | | | |
| RW: BW, GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ,
BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE,
ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK,
TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG | | | | |

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|--|----|----------|----------------|----------|
| AU 2003286074 | A1 | 20040714 | AU 2003-286074 | 20031219 |
| EP 1578788 | A2 | 20050928 | EP 2003-776748 | 20031219 |
| R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT,
IE, SI, LT, LV, FI, RO, MK, CY, AL, TR, BG, CZ, EE, HU, SK | | | | |
| US 2006171959 | A1 | 20060803 | US 2005-536606 | 20051215 |
| PRIORITY APPLN. INFO.: US 2002-324967 A 20021220
WO 2003-CH836 W 20031219 | | | | |

AB The present invention is based on the discovery of 46 genes, VIR1-VIR46, when mutated lower the virulence of a gram-neg. bacterium, and can be used in new antimicrobial therapeutic strategies. Particularly, 19 mutants from *Pseudomonas* (MUT1-MUT19) and 27 from *Klebsiella* (MUT20-MUT46) were analyzed in *Dictyostelium discoideum* host system, and shown to encode products that are implicated in virulence. The identification of these genes therefore allows attenuated microorganisms to be produced. Furthermore, the genes or their encoded products can be used to identify antimicrobial drugs, diagnostic methods for the identification of a pathogen-associated disease, and in the manufacture of vaccines.

REFERENCE COUNT: 31 THERE ARE 31 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L2 ANSWER 16 OF 27 CAPLUS COPYRIGHT 2006 ACS on STN

| | |
|-------------------|--|
| ACCESSION NUMBER: | 2004:1008670 CAPLUS |
| DOCUMENT NUMBER: | 142:88744 |
| TITLE: | Probing the active site of homoserine trans-succinylase |
| AUTHOR(S): | Rosen, Ran; Becher, Doerte; Buettner, Knut; Biran, Dvora; Hecker, Michael; Ron, Eliora Z. |
| CORPORATE SOURCE: | Department of Molecular Microbiology and Biotechnology, Faculty of Life Sciences, Tel-Aviv University, Tel-Aviv, 69978, Israel |
| SOURCE: | FEBS Letters (2004), 577(3), 386-392 |
| PUBLISHER: | CODEN: FEBLAL; ISSN: 0014-5793 Elsevier B.V. |
| DOCUMENT TYPE: | Journal |
| LANGUAGE: | English |

AB Homoserine trans-succinylase is the first enzyme in methionine biosynthesis of *Escherichia coli* and catalyzes the activation of homoserine via a succinylation reaction. The *in vivo* activity of this enzyme is subject to tight regulation by several mechanisms, including repression and activation of gene expression, feedback inhibition, temperature regulation and proteolysis. This complex regulation reflects the key role of this enzyme in bacterial metabolism. Here, the authors demonstrate--using proteomics and high-resolution mass spectrometry--that succinyl is covalently bound to one of the two adjacent lysine residues at positions 45 and 46. Replacing these lysine residues by alanine abolished the enzymic activity. These findings position the lysine residues, one of which is conserved, at the active site.

REFERENCE COUNT: 25 THERE ARE 25 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L2 ANSWER 17 OF 27 CAPLUS COPYRIGHT 2006 ACS on STN

| | |
|-------------------|--|
| ACCESSION NUMBER: | 1985:40804 CAPLUS |
| DOCUMENT NUMBER: | 102:40804 |
| TITLE: | Regulatory region of the metA gene of <i>Escherichia coli</i> K-12 |
| AUTHOR(S): | Michaeli, Shulamit; Mevarech, Moshe; Ron, Eliora Z. |
| CORPORATE SOURCE: | George S. Wise Fac. Life Sci., Tel Aviv Univ., Tel Aviv-Jaffa, 69978, Israel |
| SOURCE: | Journal of Bacteriology (1984), 160(3), 1158-62 |
| DOCUMENT TYPE: | CODEN: JOBAAY; ISSN: 0021-9193 Journal |
| LANGUAGE: | English |

AB Transcription of the metA gene of *E. coli* K-12 is from a promoter which is

under methionine control and is located next to a region which has an extensive sequence homol. with the operator regions of the metBL and metF genes. However, in the metA gene, there is a 2nd transcription start point which is located 74 base pairs upstream and which is independent of the intracellular methionine concentration

L2 ANSWER 18 OF 27 CAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 1983:84243 CAPLUS
DOCUMENT NUMBER: 98:84243
TITLE: Level of polyamines in Escherichia coli carrying the metA gene on a multicopy plasmid
AUTHOR(S): Michaeli, Shulamit; Rozenhak, Sonia; Ron, Eliora Z.
CORPORATE SOURCE: Dep. Microbiol., Tel-Aviv Univ., Tel Aviv-Jaffa, Israel
SOURCE: Advances in Polyamine Research (1983), 4, 519-20
CODEN: APYRD9; ISSN: 0160-2179
DOCUMENT TYPE: Journal
LANGUAGE: English
AB Strains of E. coli with elevated level of intracellular methionine were obtained by the introduction. of multicopy plasmids containing the metA gene, which codes for homoserine transsuccinylase [9030-70-0], the 1st enzyme in the methionine [63-68-3] pathway. One of the plasmids obtained which contained the metA gene was pMA-3. Strains carrying this plasmid were overproducers of methionine. In the presence of elevated intracellular methionine concns., there was an increase in spermidine [124-20-9] content that was concomitant with a decrease in the level of putrescine [110-60-1]; this resulted in a significant change in the ratio of spermidine-to-putrescine.

L2 ANSWER 19 OF 27 CAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 1982:469190 CAPLUS
DOCUMENT NUMBER: 97:69190
TITLE: Mechanisms involved in the increased sensitivity of Escherichia coli to microcin 15m at 42°C
AUTHOR(S): Aguilar, Alfredo; Perez-Diaz, Jose C.; Asensio, Carlos
CORPORATE SOURCE: Inst. Enzimol. Patol. Mol., Madrid, Spain
SOURCE: Current Microbiology (1982), 7(2), 83-6
CODEN: CUMIDD; ISSN: 0343-8651
DOCUMENT TYPE: Journal
LANGUAGE: English
AB E. coli Cells show a markedly increased sensitivity to the antibiotic microcin 15m when briefly treated at 42° as compared to the effect at 37°. Furthermore, mutants resistant to the microcin at 37° become sensitive at 42° at microcin concns. that are inactive at 37°. This effect can be overcome by L-methionine. The mechanism involved seems to be based on an apparent inactivation of the homoserine-O-transsuccinylase activity. As previously established, this enzyme suffers a reversible partial inactivation when the cells are shifted to 42° and the action of the microcin at this temperature seems to bring this process to a virtually irreversible stage. In mixed cultures of the microcin-producing strain and 1 E. coli stain sensitive to the antibiotic, a much stronger growth inhibition of the latter strain was observed at 42° than at 37°.

L2 ANSWER 20 OF 27 CAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 1977:548496 CAPLUS
DOCUMENT NUMBER: 87:148496
TITLE: Norleucine accumulation by a norleucine-resistant mutant of Serratia marcescens
AUTHOR(S): Kisumi, Masahiko; Sugiura, Masaki; Chibata, Ichiro
CORPORATE SOURCE: Res. Lab. Appl. Biochem., Tanabe Seiyaku Co., Ltd., Osaka, Japan
SOURCE: Applied and Environmental Microbiology (1977), 34(2),

135-8

CODEN: AEMIDF; ISSN: 0099-2240

DOCUMENT TYPE:

Journal

LANGUAGE:

English

AB A norleucine-resistant mutant was derived from an isoleucine-valine auxotroph of a leucine accumulator of *S. marcescens*. The norleucine-resistant mutant could accumulate norleucine from norvaline in the medium without the addition of methionine, which antagonized norleucine. This mutant constitutively formed homoserine-O-transsuccinylase.

L2 ANSWER 21 OF 27 CAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 1975:454709 CAPLUS

DOCUMENT NUMBER: 83:54709

TITLE: Methionine biosynthesis in isolated *Pisum sativum* mitochondria

AUTHOR(S): Clandinin, Michael T.; Cossins, Edwin A.

CORPORATE SOURCE: Dep. Bot., Univ. Alberta, Edmonton, AB, Can.

SOURCE: Phytochemistry (Elsevier) (1974), 13(3), 585-91

CODEN: PYTCAS; ISSN: 0031-9422

DOCUMENT TYPE: Journal

LANGUAGE: English

AB Homocysteine-dependent transmethylases utilizing 5-methyltetrahydropteroylglutamic acid and S-adenosylmethionine as Me donors were examined in (NH₄)₂SO₄ fractions prepared from isolated mitochondria of pea cotyledons. Substantial levels of 5-methyltetrahydropteroylglutamate transmethylase (I) [9033-23-2] were detected, the catalytic properties of this enzyme were similar to those of a previously reported enzyme present in cotyledon exts. The mitochondrial I had an apparent Km of 25 μM for the Me donor, was saturated with homocysteine at 1 mM and was inhibited 50% by L-methionine at 2.5 mM. At similar concns. of Me donor the mitochondrial S-adenosylmethionine methyltransferase was not saturated. Mitochondrial preps. were capable of synthesizing substantial amts. of S-adenosylmethionine but lacked ability to form S-methylmethionine. Significant levels of β-cystathione, cystathione-γ-synthase, L-homoserine transacetylase, and L-homoserine transsuccinylase were detected in the isolated mitochondria. The activity of the enzymes of homocysteine biosynthesis was not affected by L-methionine in vitro. Thus, pea mitochondria are able to catalyze the synthesis of methionine [63-68-3] de novo.

L2 ANSWER 22 OF 27 CAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 1974:45506 CAPLUS

DOCUMENT NUMBER: 80:45506

TITLE: Control of homoserine-O-transsuccinylase in a methionine-requiring mutant of the blue-green alga *Anacystis nidulans*

AUTHOR(S): Delaney, S. F.; Dickson, A.; Carr, N. G.

CORPORATE SOURCE: Dep. Biochem., Univ. Liverpool, Liverpool, UK

SOURCE: Journal of General Microbiology (1973), 79(Pt. 1), 89-94

CODEN: JGMIAN; ISSN: 0022-1287

DOCUMENT TYPE: Journal

LANGUAGE: English

AB The regulation of the 1st step in methionine biosynthesis, homoserine-O-transsuccinylase, has been examined in a methionine-requiring mutant of *A. nidulans*. No evidence of derepression of the biosynthesis of this enzyme was found even under conditions of acute methionine starvation. End product inhibition of the enzyme by homoserine, cystathione, and methionine was demonstrated, and shown, in the latter case, to be of an allosteric nature. The lack of transcription control of this enzyme is discussed as an example of a general phenomenon in this group of microorganisms.

L2 ANSWER 23 OF 27 CAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 1972:56522 CAPLUS
DOCUMENT NUMBER: 76:56522
TITLE: Regulation of the methionine feedback-sensitive enzyme
in mutants of *Salmonella typhimurium*
AUTHOR(S): Lawrence, David A.
CORPORATE SOURCE: Lab. Enzymol., CNRS, Gif-sur-Yvette, Fr.
SOURCE: Journal of Bacteriology (1972), 109(1), 8-11
CODEN: JOBAAY; ISSN: 0021-9193
DOCUMENT TYPE: Journal
LANGUAGE: English
AB Assay of the first enzyme unique to methionine biosynthesis,
homoserine-O-transsuccinylase, in metJ and metK regulatory mutants of *S.*
typhimurium showed that synthesis of the enzyme was derepressed seven- and
four-fold, resp. The possibility of noncoordinate regulation of the
methionine enzymes is discussed. In metA feedback resistant mutants the
enzyme activity can be inhibited in vitro by 10 mM S-adenosylmethionine
but not by 10 mM L-methionine. The synergistic inhibition found for the
wild-type enzyme is not effective in these latter mutants.

L2 ANSWER 24 OF 27 CAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 1972:55595 CAPLUS
DOCUMENT NUMBER: 76:55595
TITLE: Miscellaneous procedures involved in transsulfuration
AUTHOR(S): Flavin, Martin
CORPORATE SOURCE: Lab. Biochem., Natl. Heart Lung Inst., Bethesda, MD,
USA
SOURCE: Methods Enzymol. (1971), Volume 17, Issue Pt. B,
450-3. Editor(s): Colowick, S. P. Academic: New
York, N. Y.
CODEN: 18HWA8
DOCUMENT TYPE: Conference
LANGUAGE: English
AB Cystathione β -synthase, assay of mixts. of β - and
 γ -cystathionases, β -cystathionase and cystathione
 γ -synthase from *Neurospora*, and homoserine
transsuccinylase are reviewed. 17 refs.

L2 ANSWER 25 OF 27 CAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 1971:484622 CAPLUS
DOCUMENT NUMBER: 75:84622
TITLE: Growth rate of *Escherichia coli* at elevated
temperatures. Reversible inhibition of homoserine
trans-succinylase
AUTHOR(S): Ron, Eliora Z.; Shani, M.
CORPORATE SOURCE: Dep. Microbiol., Tel Aviv Univ., Tel Aviv, Israel
SOURCE: Journal of Bacteriology (1971), 107(2), 397-400
CODEN: JOBAAY; ISSN: 0021-9193
DOCUMENT TYPE: Journal
LANGUAGE: English
AB A shift from 37 to 44° decreased the activity of crude or partially
purified *E. coli* homoserine transsuccinylase (I)
preps. This effect was rapid and immediately reversible. The change in
I activity induced by elevated temperature may involve breaking of H or
hydrophobic bonds, since urea at 37° caused a similar reversible
lowering of I activity.

L2 ANSWER 26 OF 27 CAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 1970:528144 CAPLUS
DOCUMENT NUMBER: 73:128144
TITLE: The mechanism of ethionine toxicity to *Escherichia coli*
AUTHOR(S): Miller, Kathryn L.; Martin, William Randolph

CORPORATE SOURCE: Dep. of Microbiol., Univ. of Chicago, Chicago, IL, USA
SOURCE: Proceedings of the Society for Experimental Biology
and Medicine (1970), 135(2), 311-16
CODEN: PSEBAA; ISSN: 0037-9727

DOCUMENT TYPE: Journal
LANGUAGE: English

AB Toxic effects of ethionine on *E. coli* in a glucose-salts medium are manifested by growth inhibition and loss of viability. Valine-14C incorporation and β -galactosidase studies indicate that ethionine rapidly inhibits protein synthesis. The methionine precursors, homocysteine and cystathione, as well as methionine itself, reverse all ethionine effects while O-succinylhomoserine and homoserine do not. Homoserine O-transsuccinylase, the first enzyme unique for methionine biosynthesis, is inhibited by ethionine while the analog does not inhibit cystathione synthetase or methionine transfer RNA synthetase. Data indicate that the initial effect of ethionine on *E. coli* is to act as an inhibitor of homoserine O-transsuccinylase resulting in a severe depletion of methionine available for protein and other cellular synthesis.

L2 ANSWER 27 OF 27 CAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 1971:431670 CAPLUS

DOCUMENT NUMBER: 75:31670

TITLE: Genetical study of the feedback-sensitive enzyme of methionine synthesis in *Salmonella typhimurium*

AUTHOR(S): Chater, K. F.; Rowbury, R. J.

CORPORATE SOURCE: Genet. Dep., Univ. Birmingham, Birmingham, UK

SOURCE: Journal of General Microbiology (1970), 63(Pt. 1), 111-20

CODEN: JGMIAN; ISSN: 0022-1287

DOCUMENT TYPE: Journal

LANGUAGE: English

AB The homoserine-O-transsuccinylase activity of 3 methionine excreting mutants of *S. typhimurium* was examined. In 1 the enzyme was resistant to inhibition by methionine or its analog α -methylmethionine, while in the other 2 feedback inhibition was normal. The failure of methionine in the 1st was attributed to failure to penetrate the cells or to an alteration of homoserine-O-transsuccinylase such that it was not sensitive to feedback inhibition.

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